

THE LIFE HISTORY OF *HYPOCYSTA ANGUSTATA ANGUSTATA*
WATERHOUSE & LYELL AND *HYPOCYSTA IRIUS* (FABRICIUS)
(LEPIDOPTERA: NYMPHALIDAE: SATYRINAE)

By G. A. Wood

P.O. Box 122, Atherton, N. Qld 4883

Abstract

The early stages of *Hypocysta angustata angustata* Waterhouse & Lyell and *Hypocysta irius* (Fabricius) are described. Comments is made on the number of larval instars for each species; *H. irius* is the first Australian species to be reported with only four instars.

Introduction

The black and white ringlet, *Hypocysta angustata angustata* Waterhouse and Lyell, is a species of the rainforest of the Claudie River to Coen area, Cape York Peninsula (Common and Waterhouse, 1981). The northern ringlet, *Hypocysta irius* (Fabricius), is distributed along the east coast of Australia from Grafton to Cape York. It flies commonly along the margins of rainforests, to which it is confined. The larvae have been reported to feed on *Imperata* and other coarse grasses (Poaceae) (Common and Waterhouse, 1981).

Females of both species from Iron Range, northern Queensland, were confined with the various grasses found along rainforest margins in the area, Ova were deposited on *Tetrarrhena* sp. (Poaceae) and adults were successfully raised on this food plant.

Hypocysta angustata angustata Waterhouse and Lyell

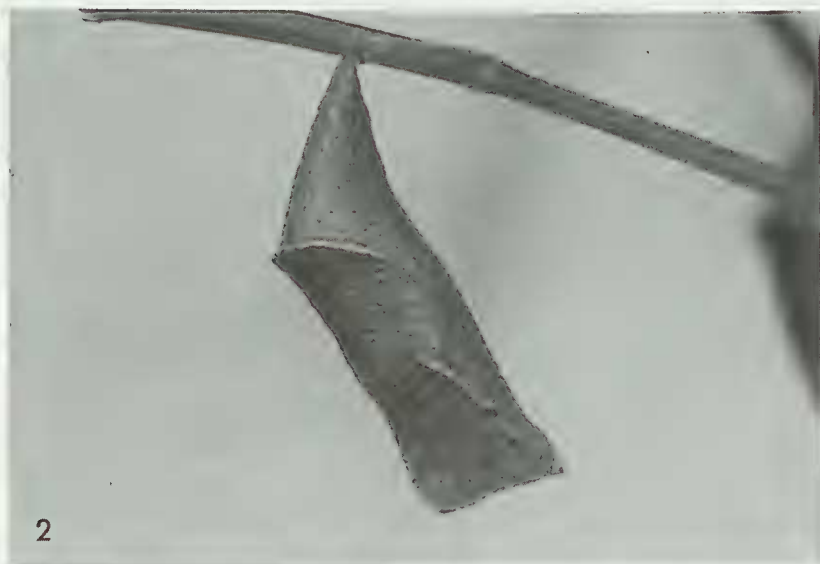
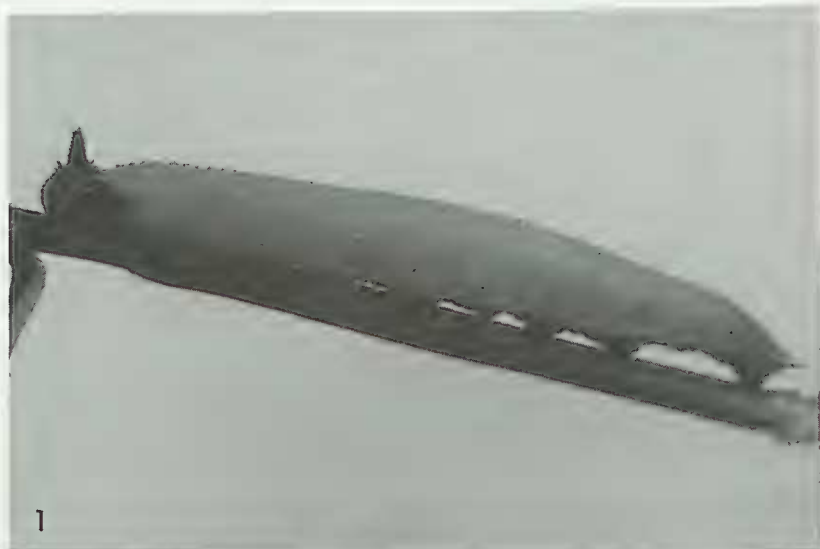
Food plant. *Tetrarrhena* sp. (Poaceae), wire grass.

Ovum. 0.6 mm diameter. Shiny pale green, smooth, spherical. Deposited singly beneath the leaves of the food plant.

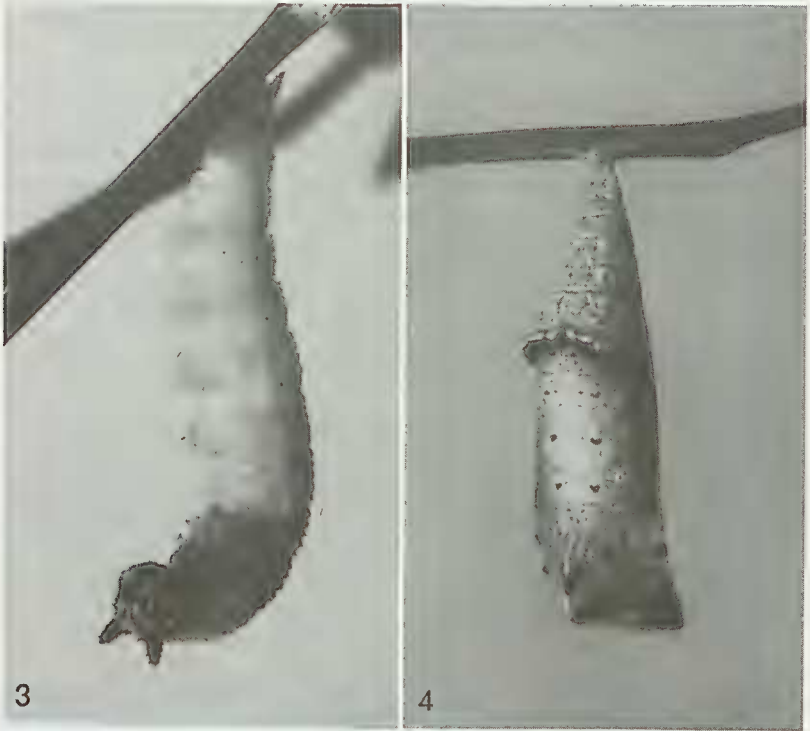
First instar. Length 2.5 mm. Head black, smooth, shiny, round, nearly flat dorsally, with a very shallow median depression and minute black hairs. Body greenish-white, smooth, with pale hairs.

Third instar. Length 6 mm. Head with short, blunt dorsolateral horns and covered with small conical projections and short hairs. Dull brown with apex of horns and two spots on each side of head orange. Body green, with longitudinal strips of dense, very short setae, giving it a striped, rough appearance. Anal segment bifurcate.

Fifth instar (Fig. 1). Length (without processes) 15 mm. Head dull brown, orange spots in third instar developed to conical projections, outer side of horns and sides of head orange, covered with short hairs. Head with median orange strip on upper half, two orange spots between horns and dull orange patches on lower half of face. Body as in third instar, greenish-brown, later turning dark green, anal processes (length 0.8 mm) brown above, spiracles black.



Figs 1, 2. *Hypocysta angustata angustata* Waterhouse & Lyell: (1) fifth instar larva; (2) pupa, lateral view.



Figs 3, 4. *Hypocysta irius* (F.): (3) larva in prepupal phase; (4) pupa, dorso-lateral view.

Pupa (Fig. 2). Length 12 mm. Pale brown with darker brown markings, angular, with short lateral projections at anterior end a transverse ridge on abdomen, a longitudinal dorsal ridge on thorax and a ridge along each wing case. Abdominal ridge with anterior surface dark brown, thoracic ridge with brown patch at apex and ridge on each wing case brown on dorsal surface. Spiracles dark brown. Suspended by cremaster.

Notes. Eggs laid in late December produced adults in 45 days. Ova hatched in four days, the larval stage lasted 33 days, and the pupal period was eight days.

Larvae shelter beneath the leaves or on the stem of the food plant and feed both during the night or day.

Pupation occurred on the food plant.

Hypocysta irius (Fabricius)

Food plant. *Tetrarrhena* sp. (Poaceae), wire grass.

Ovum. 0.8 mm diameter. Shiny yellow, smooth, spherical. Deposited singly on the underside of leaves of the food plant.

First instar. Length 3 mm. Head black, smooth, shiny, with a pair of short, blunt, dorso-lateral horns and minute black hairs. Body cream, smooth, with minute white hairs.

Second instar. Length 5 mm. Head dull black, covered with minute conical projections and minute hairs. Perimeter of head with three small pairs of pointed orange projections, one pair between the horns and the others laterally. Body green, with longitudinal strips of dense, very short setae, giving it a striped, rough appearance. Anal segment with short, pointed projections.

Third instar. Length (without projections) 8 mm; projection 0.5 mm. Head dull chocolate brown, perimeter with further projections orange, centre with seven pale orange patches. Projections larger, hairs longer and pale yellow. Body green, areas lacking setae appearing as longitudinal furrows. Anal projections tipped pale brown.

Fourth instar (Fig. 3). Length (without processes) 14 mm; projections 1 mm. As in third instar but with features more apparent. Anal projections yellow.

Pupa (Fig. 4). Length 12 mm. Pale grey-brown with pale brown mottling, with short lateral projections at anterior end, a pronounced transverse ridge on abdomen, a longitudinal dorsal ridge on thorax and a ridge along each wing case. Abdominal ridge irregular, dark brown. Thoracic ridge smooth, with two dark brown patches. Ridge on each wing case produced anteriorly to a point, with brown patches. Anterior lateral projections and spiracles dark. Suspended by cremaster.

Notes. Eggs laid in late September produced adults in 38 days. Ova hatched in six days, the larval stage lasted 24 days, and the pupal period was eight days.

Larval shelter beneath the leaves of the food plant and feed during the day or night. Pupation occurred on the food plant.

Discussion

To my knowledge *Hypocysta irius* is the first Australian butterfly reported with less than five larval instars. All larva were reared individually and instars counted and confirmed by head capsule counts. *H. irius* were reared on two occasions confirming beyond doubt that this species has only four instars.

Two larvae of *H. angustata* were reared and both had five instars.

The horns of *Hypocysta irius* final instar (fourth) are more prominent than those of *Hypocysta angustata angustata* final instar (fifth).

The pupa of *Hypocysta irius* can be separated from that of *Hypocysta angustata angustata* by an examination of the abdominal ridge. The abdominal ridge of *Hypocysta irius* is irregular and broken. That of *Hypocysta angustata angustata* is uniform and smooth in appearance.

Reference

- Common, I. F. B. and Waterhouse, D. F., 1981. *Butterflies of Australia*. Second edition. Angus and Robertson, Sydney. 682 pp.